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PHILIPS INTELLECTUAL PROPERTY & STANDARDS			SAIN'T CYR, LEONARD	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,426	Applicant(s) APREA ET AL.
	Examiner LEONARD SAINT CYR	Art Unit 2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 June 2009.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-21 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06/12/09 is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/0256/06)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 06/12/09 have been fully considered but they are not persuasive.

Applicant argues that Fielder et al., do not teach varying effective audio frame lengths F of the audio frame per a respective audio frame index j in a defined sequence of effective audio frame lengths $F(j)$...wherein the output stream can be spliced at each video frame without degradation to audio information of the audio data of corresponding audio frames (Amendment, pages 11 – 17).

The examiner disagrees, since Fielder et al., disclose "In each scheme, frames of 2048 samples are partitioned into overlapping **segments having lengths that vary between a minimum length of 256 samples and an effective maximum length of 1152 samples**...each frame are partitioned into overlapping segments of varying length...Cutting one or more **streams of video/audio information into sections and joins or splices the ends of two sections to form a new information stream**...avoiding or at least minimizing audible artifacts that result from editing operations like splicing, and controlling processing latency to more easily maintain **video/audio synchronization** (col.21, lines 28 – 37; col.1, lines 48 – 50; col.5, lines 24 – 29). **Avoiding or minimizing audible artifacts that result from splicing video/audio information** implies splicing at each video frame without degradation to audio information of the audio data of corresponding audio frames.

Applicant argues that the claims have been amended, as appropriate, to show transformation or reduction of subject matter to different state of thing, and thus now renders the same as being directed to statutory subject matter (Amendment, pages 8, and 9).

The examiner disagrees, and points out that encoding and outputting audio data do not consider as transformation or reduction of subject matter to different state of thing, since those steps can be interpreted as manipulation of numbers, representing video/audio information.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 – 21 define non-statutory processes because they merely manipulate an abstract idea (mathematical algorithm). The claimed process, a series of steps to be performed on a computer, simply manipulates an abstract idea; does not have any post or pre computer process activity.

In the instant application, the disclosure is directed to any and every structure for carrying out the claimed functions, and not solely to specific structure.

Claims 1 – 21 reviewed in light of the specification, simply recite an abstract idea for encoding audio using a stream that carries audio and video data.

As can be seen by claims 1 – 20, these claims recite an abstract idea by setting forth the step of “providing a mean effective audio frame length F that equals a video frame length $1/F_v$ over an integral number M video frames, varying lengths F of the audio frames in a defined sequence of frame lengths”. These steps are abstract ideas.

Reviewing each claim as whole fails to show the transformation or reduction of subject matter to a different state of thing. Providing a mean effective audio frame length F that equals a video frame length $1/F_v$ over an integral number M video frames, is merely an abstract idea to encode audio data, not a different state or thing.

It is readily apparent that when claims 1 – 21 are each taken as a whole, the claims are directed to the preemption of an abstract idea, and thus are non-statutory.

Claims 1 - 16 are rejected under 35 USC 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps to be performed, a statutory process under 35 USC 101 must be tied to another statutory category (such as a manufacture or a machine) or transform underlying subject matter (such as an article or material) to a different state or thing. The steps in those claims can be performed manually without the use of a particular machine. Those claims could be done in a piece of paper, wherein digital signal processing (DSP) theory can be used to derive the effective audio

frame length by varying lengths F of the audio input frame data. Thus, claims 1 - 16 do not define a statutory process.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 17 – 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Page 4, lines 12 – 15, and 32 – 33; page 5, lines 1 – 5; and Fig. 1 – 3, of the specification only disclose that "audio encoder/decoder may be implemented for example as a software component or a hardware circuit"; but **those portions of the specification do not disclose any means for calculating an expected effective audio data, nor means for encoding the audio data for an integer number of N audio frames into audio frames of variable effective audio frame length, as now recited in claims 17 – 21.**

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 – 4, and 13 – 15, and 17 are rejected under 35 U.S.C. 102(a) as being anticipated by Fielder et al., (US Patent 6,226,608).

As per claims 1, and 17, Fielder et al., teach a method of audio encoding a stream that carries audio and video data, including:

receiving audio and video data input (col.5, lines 30 – 35);

encoding the audio data, for an integer number of n audio frames of the audio data, to have a mean effective audio frame length {overscore (F)} that equals a video frame length $1/f_{sub}V$ over an integer number of M video frames of the video data (see tables I, II, and III), where f_V equals a video frame rate of the video data ("a frame rate of about 30 Hz"), wherein the encoding includes varying effective audio frame lengths F of the audio frame per a respective audio frame index j in a defined sequence of effective audio frame lengths ("frames of 2048 samples are partitioned into overlapping segments having lengths that vary between a minimum length of 256 samples and an effective maximum length of 1152 samples...each frame are partitioned into overlapping segments of varying length"; col.21, lines 28 – 37; col.3, lines 1 – 67; tables I, II, and III);

outputting a stream that carries encoded audio and video data, wherein the output stream can be spliced at each video frame without degradation to audio information of the audio data of corresponding audio frames ("Cutting one or more streams of video/audio information into sections and joins or splices the ends of two sections to form a new information stream...avoiding or at least minimizing audible artifacts that result from editing operations like splicing, and controlling

processing latency to more **easily maintain video/audio synchronization**"; col.1, lines 48 – 50; col.5, lines 24 – 29).

As per claim 2, Fielder et al., further disclose the frame length F is adjusted by varying an overlap O between successive audio frames ("overlapping segments having lengths that vary..."; Abstract, line 9; col.15, lines 1 – 5).

As per claim 3, Fielder et al., further disclose that the value F(j) repeats periodically on j, the periodicity of F(j) defining a sequence of audio frames within a sequence of video frames ("sequence of overlapping segments"; col.5, line 65 - col.6, line 5).

As per claim 4, Fielder et al., further disclose that the method having M video and N audio frames per sequence, each audio frame being composed of k blocks of t samples each (col.12, lines 48 – 51).

As per claims 13, and 14, Fielder et al., teach a method of audio encoding a stream that encodes audio and video data including;
receiving frames of audio and video data (col.5, lines 30 – 35);
encoding audio samples of N quasi video-matched audio frames into frames with a defined sequence of overlap lengths, wherein the encoded audio samples have a mean effective audio frame length F that equals a video frame length 1/fv over an

integer number of M video frames of the video data (see tables I, II, and III), where fv equals a frame rate of the video data ("a frame rate of about 30 Hz") wherein an effective length of the defined sequence of overlap lengths of the encoded audio frames coincides with a length of a sequence of M video frames, where M and N are positive integers ("frames of 2048 samples are partitioned into overlapping **segments having lengths that vary between a minimum length of 256 samples and an effective maximum length of 1152 samples**...each frame are partitioned into overlapping segments of varying length"; col.21, lines 28 – 37; col.3, lines 1 – 67; tables I, II, and III); outputting a stream that carries encoded audio and video data, wherein the output stream can be spliced at each video frame without degradation to audio information of the audio data of corresponding audio frames ("Cutting one or more **streams of video/audio information into sections and joins or splices the ends of two sections to form a new information stream...avoiding or at least minimizing audible artifacts that result from editing operations like splicing**, and controlling processing latency to more **easily maintain video/audio synchronization**"; col.1, lines 48 – 50; col.5, lines 24 – 29).

As per claim 15, Fielder et al., further disclose audio frames, each of which is tagged to indicate a size of the audio frame (N parameter pertains ...segment length"; col.17, lines 4 – 6; col.11, lines 26, and 27).

Claim Rejections - 35 USC § 103

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fielder et al., (US Patent 6,226,608).

As per claim 18, Fielder et al., do not specifically teach that the variable overlaps includes a total of P short overlaps of length O and a total of Q long overlaps of length O+ in an overlap sequence. However, since Fielder et al., disclose generate a sequence of overlapping segments of audio information (col.5, lines 58, and 59). One having ordinary skill in the art at the time the invention was made would have found it obvious to have short and long overlaps segments, because that would help process one or more channels of audio information by a block-encoding process to generate encoded information stream (col.7, lines 55 - 57).

8. Claims 16, and 19 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fielder et al., (US Patent 6,226,608) in view of Murakami et al., (US Patent 5,930,251).

As per claim 16, Fielder et al., do not specifically teach that each block of each audio frame is tagged to indicate whether or not the block is a redundant block.

Murakami et al., teach that the audio coding cuts redundant component of the audio signal by using one of a plurality of information-source coding method and produces an audio coded bits stream (col.7, lines 52 - 62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to delete redundant components as taught by Murakami et

al., in Fielder et al., because that would improve the audio coding system (col.7, lines 60 – 67).

As per claim 19, Fielder et al., teach an audio decoder for decoding a stream that encodes audio and video data, comprising:

an input for receiving the stream of encoded audio and video data (col.5, lines 30 – 35);

wherein the encoded audio data comprises audio data encoded for an integer number of N audio frames into audio frames of variable effective audio frame length such that (i) a mean effective audio frame length F of the N audio frames equals (ii) the video frame length F over an integer number of M video frames (see tables I, II, and III), where f_v equals a video frame rate of the video data ("a frame rate of about 30 Hz"), and the audio frames of a respective audio frame index j each have a variable overlap that provides an effective audio frame length F in a defined sequence of effective audio frame lengths $F(j)$ at encoding ("frames of 2048 samples are partitioned into overlapping segments having lengths that vary between a minimum length of 256 samples and an effective maximum length of 1152 samples...each frame are partitioned into overlapping segments of varying length"; col.21, lines 28 – 37; col.3, lines 1 – 67; tables I, II, and III);

means for calculating an expected effective audio frame length of an incoming encoded audio frame based on a defined sequence of effective audio frame lengths, adjusting the actual length of the incoming encoded audio frame to make it equal to the

expected effective audio frame length, ("sequence of overlapping segments...and the sequence having a length equal to the frame interval plus a frame overlap interval" col.5, lines 20 – 24; Abstract, lines 9 - 11; col.15, lines 1 – 5; col.29, line 6; col.5, line 65 – col.6, line 8);

an output for outputting decoded audio and video data obtained in response to a respective processing by the calculating, adjusting, and determining means ("decoding of audio information that is conveyed in frames aligned with video information frames"; col.5, lines 17 – 21).

However, Fielder et al., do not specifically teach determining whether any block within a received encoded audio frame is a redundant block or a non-redundant block, mapping the non-redundant blocks onto sub-band samples.

Murakami et al., teach that the audio coding cuts redundant component of the audio signal by using one of a plurality of information-source coding method and produces an audio coded bits stream (col.7, lines 52 - 62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to delete redundant components as taught by Murakami et al., in Fielder et al., because that would improve the audio coding system (col.7, lines 60 - 67).

As per claim 20, Fielder et al., further disclose modifying the overlap status of blocks in the data stream by application of one or more of a set of block operators to each block ("editing operations like splicing"; col.5, lines 27 – 29).

As per claim 21, Fielder et al., further disclose that the set of operators includes a SHIFT, an operator that is a combination of both DROP and APPEND operators ("shifting to a shorter segment length"; col.5, line 8).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone

number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571) 272-1000.

LS
09/22/09

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626